

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants: Emergency Determination of Endangered Status and Critical Habitats for Two Fish Species in Ash Meadows, Nevada

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Emergency rule.

SUMMARY: The Service determines the Ash Meadows speckled dace and Ash Meadows Amargosa pupfish to be Endangered species and designates their Critical Habitats. This action is being taken because these species are restricted to the Ash Meadows region and groundwater basin in Nye County, Nevada, where they are facing intensifying threats. Imminent land development for housing subdivisions, clearing of land for road construction and agricultural purposes, pumping of groundwater, and diversion of surface flows threaten the integrity of the species' habitat and therefore their survival. This action will result in the continuation of protective measures beyond the January 5, 1982, expiration date of their May 10, 1982, emergency listing as Endangered.

DATES: This emergency determination is effective on January 5, 1983, and expires on September 2, 1983.

ADDRESSES: Interested persons or organizations can obtain information from and submit written comments to the Regional Director, U.S. Fish and Wildlife Service, Lloyd 500 Building, Suite 1692, 500 N.E. Multnomah Street, Portland, Oregon 97232.

FOR FURTHER INFORMATION CONTACT: Mr. Sanford R. Wilbur, U.S. Fish and Wildlife Service, Lloyd 500 Building, Suite 1692, 500 N.E. Multnomah Street, Portland, Oregon 97232 (phone 503/231-6131) or Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-2771).

SUPPLEMENTARY INFORMATION:

Background

The Ash Meadows Amargosa pupfish (*Cyprinodon nevadensis mionectes*) and Ash Meadows speckled dace (*Rhinichthys osculus nevadensis*) are found only in the Ash Meadows basin and require the integrity of its physical environment and maintenance of spring, surface, and subsurface flows for their survival. The Ash Meadows speckled dace was described as a full species

(*Rhinichthys nevadensis*) by Gilbert (1893) based on material collected in 1891 (La Rivers, 1962). It was later designated a subspecies of *Rhinichthys osculus* by Hubbs and Miller (1948). *Cyprinodon nevadensis mionectes* was described by Miller (1948) based on specimens collected in 1937 and 1942.

An emergency rule published on May 10, 1982, listed these fishes as Endangered for a period lasting 240 days. This period of emergency listing expires on January 5, 1983. A proposal of Endangered status and Critical Habitats for these two fish species under normal listing procedures is being published concurrently with this rule. Development of this proposal was delayed as a result of uncertainties concerning changes in listing procedures specified by the 1982 Amendments to the Endangered Species Act. In addition, the Bureau of Land Management (BLM) has been negotiating with Preferred Equities Corporation (PEC), owner of most of these species' remaining habitat, for a land exchange that would have brought these habitats under BLM protection. These negotiations now appear to indicate that a land exchange for all of PEC's land is no longer being considered. The uncertain status of this possible land exchange has delayed development of the economic analysis required for the designation of Critical Habitat. The present emergency listing and Critical Habitat designations for these species will provide protection for these species for the time period from January 5, 1983, the date of expiration of the original emergency listing, until the normal rulemaking process for listings is completed.

The Ash Meadows region is a unique and diverse desert wetland located east of the Amargosa River. These wetlands are maintained by flow from several dozen springs and seeps which are fed by an extensive groundwater system which extends more than 167 km northeast of Ash Meadows. Hundreds of plant and animal species, many of them endemic, are associated with these wetlands and depend upon them for survival.

The Ash Meadows Amargosa pupfish and Ash Meadows speckled dace are restricted to the large warmwater springs and related outflows of Ash Meadows. The pupfish inhabits the pools and outflows of Fairbanks, Rogers, Longstreet, Jack Rabbit, Big, and Point of Rocks Springs; Crystal Pool; three unnamed springs just southeast of Longstreet Spring; and the two westernmost springs of the Bradford Springs group. These springs are at elevations ranging from 655 to 700 m and are generally oriented along an

imaginary line running 16 km from Fairbanks Spring to Big Spring. Water temperatures of the springs are consistently between 24° and 30° C. Flowing water of spring outflows is preferred by the speckled dace. Although formerly inhabiting much of the interconnected surface drainage in Ash Meadows, dace populations have been severely reduced and are now restricted to springs and outflows of Jack Rabbit Spring, Big Spring, and the two westernmost springs of the Bradford Springs group. A number of exotic species, such as mosquitofish and black mollies, have been introduced to these springs and compete with the native fishes.

Many other plant and animal species are endemic to Ash Meadows. The Service proposed the Ash meadows turban snail (*Flumicola erythropoma*) as Threatened on April 28, 1976 (41 FR 17742). This proposal was withdrawn on December 10, 1979 (44 FR 70796), as a result of the 1978 Amendments to the Endangered Species Act. Current evidence indicates that this species, as proposed, actually comprised more than one species. This area has an extraordinarily diverse freshwater mollusk fauna, which is currently being studied by Dr. Dwight Taylor of Tiburon, California. Of special interest is the presence of two species flocks or complexes of snails which are found within a 5-mile radius in Ash Meadows and gives Ash Meadows the highest concentration of endemic species in the United States. Most of these mollusk species have not been scientifically described and named.

Two endemic Ash Meadows fishes, the Devil's Hole pupfish (*Cyprinodon diabolis*) and the Warm Springs pupfish (*Cyprinodon nevadensis pectoralis*) are already listed as Endangered. The Devil's Hole pupfish's natural distribution is restricted to Devil's Hole, a disjunct portion of Death Valley National Monument. The Warm Springs pupfish occurs only in small nearby springs at an elevation of about 710 m.

The Point of Rocks Springs naucorid (*Ambrysus amargosus*) is an insect that has been recorded living only in Point of Rocks Springs.

A general notice of review on candidate plants in the December 15, 1980, Federal Register (45 FR 82479) included six species that are restricted to Ash Meadows. These species and their edaphic associations are as follows: The spring-loving centaury (*Centaurium namophilum* var. *namophilum*) is restricted to wet clay soils of spring areas and stream banks; the Amargosa niterwort (*Nitrophila*

mohavensis) is found only on undisturbed, salt-encrusted, heavy alkaline mud flats in the Carson Slough area in Inyo County, California; the Ash Meadows gum plant (*Grindelia fraxino-pratensis*) occurs in small populations in relatively undisturbed moist to wet clay soils of spring areas and stream banks, and is often associated with the spring-loving centauray; the Ash Meadows stick-leaf (*Mentzelia leucophylla*) is associated with desert washes in coarse-grained, water-sorted, alkaline soils; the Ash Meadows milk-vetch (*Astragalus phoenix*) occurs in washes and on flats and low knolls in fine-grained, clay-like soils; and corrugated sunray (*Enceliopsis nudicaulis* var. *corrugatum*) occupies strongly alkaline and often poorly drained soils in several localities. An additional species in that review, the tecopa birds-beak (*Cordylanthus tecopensis*), has a wider but still restricted distribution that includes Ash Meadows.

Early homesteaders attempted to farm Ash Meadows using the free-flowing water from the springs for irrigation. These efforts failed because the salty, clay soils were not suitable for crops.

Agricultural practices in the late 1960s and early 1970s resulted in large tracts of land being plowed and the installation of groundwater pumps and diversion ditches to support a cattle-feed operation. These practices resulted in the destruction of many populations of plants and animals and their wetland habitats by alteration of the land surface and lowering of the water table. In 1976, the Supreme Court limited the amount of groundwater pumping in Ash Meadows to ensure sufficient water levels in the only known habitat of the Endangered Devil's Hole pupfish. The agricultural interests in Ash Meadows sold approximately 36 square km of land to a real estate developer, Preferred Equities Corporation (PEC), in 1977.

While the Bureau of Land Management (BLM) is the principal landowner in Ash Meadows, PEC owns most of the surface water rights, which are currently designated for municipal use. Groundwater pumping would be required to develop and support municipal and agricultural activities. The imminent development and concomitant destruction of Ash Meadows by PEC may be avoided if an acceptable alternative can be devised with BLM to protect this fragile habitat. A possibility did exist whereby BLM would have exchanged land suitable for development in the Pahrump Valley (approximately 20 miles SE of Ash Meadows) for PEC's holding in Ash

Meadows. Negotiations between FWS, BLM, and PEC proved fruitless: PEC found BLM lands in the Pahrump Valley unacceptable because of inadequate water supply.

The initial phase of construction, when completed, would result in the destruction of Crystal Pool, Point of Rocks and Jack Rabbit Springs, and possibly lower the level of other springs by groundwater pumping. PEC's activities have already substantially altered surface flows and spring hole morphometry at these sites. The amount of land which would be altered for housing is unknown. PEC has recently constructed a multi-lane road which connects Ash Meadows at Point of Rocks Spring with Pahrump Valley, a connecting section of road (2 miles long and 80 feet wide) north of Jack Rabbit Spring, and a new road (1.5 miles long and 30 feet wide) east of Crystal Pool. In addition, approximately 1,000 acres of cotton have been planned west of Point of Rocks Spring. The terrestrial habitats of the Ash Meadows ecosystems are as fragile as the aquatic habitats. Many candidate plant species are dependent upon the unique hydrological characteristics of this basin and require undisturbed soils for sustenance and propagation.

Factors Affecting the Species

The Service's listing regulations (50 CFR Part 424) provide for a review of the five factors below when listing (or reclassifying or delisting) a species (§ 424.11):

(A) The present or threatened destruction, modification or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) Inadequacy of existing regulatory mechanisms; and

(E) Other natural or manmade factors affecting its continued existence.

These factors, and their application to the subject species, are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.*

The Ash Meadows Amargosa pupfish and the Ash Meadows speckled dace are endemic to the Ash Meadows basin and depend upon the integrity of this fragile ecosystem for their survival. These species require undisturbed flows from the extensive Ash Meadows basin aquifer. The imminent threat to their existence is the proposed development of Ash Meadows by PEC into a residential, recreational, industrial, and agricultural community. Construction activities will clear essential habitat,

directly extirpate populations of these fish, and alter surface drainage patterns. Human habitation will require great quantities of potable water. Utilization of surface outflows from springs and pumping of the aquifer will reduce or eliminate surface flows, lower the water table, and interfere with ground water recharge which will destroy down-gradient wetlands.

Diversion of spring outflows and pumping of spring holes and ground water to provide water for the proposed development will destroy essential habitat of the Ash Meadows speckled dace and Ash Meadows Amargosa pupfish. Since all springs in this aquifer are intricately connected, drawdown at one location would affect water levels of many other springs. In addition, such alternation of surface flows will prevent migration to other suitable habitats and therefore prevent natural expansion of range or recolonization by these species.

To date, the outflow channels of Crystal Pool and King Pool (Point of Rocks Spring) have been modified to increase flows, resulting in the lowering of pool levels 1-1.5 feet and consequently decreasing riparian habitat. A significant area of land has already been altered by road construction in the vicinity of Crystal Pool and Point of Rocks and Jack Rabbit Springs.

Initial construction activities in late spring and summer of 1981 severely altered the watercourse of two springs (Point of Rocks and Bradford) and related spring hole morphometry; these activities severely reduced the populations of the Ash Meadows speckled dace and Ash Meadows Amargosa pupfish in Bradford Springs. Recent excavation of Fairbanks Spring by heavy equipment has apparently eliminated all but one pupfish.

Recent construction activities in Ash Meadows have continued the destruction of fish habitat that began with early agricultural activities. The Ash Meadows Amargosa pupfish has been extirpated in Bole, Deep, and Forest Springs. The Ash Meadows speckled dace has been extirpated from Forest, Fairbanks, Rogers, Longstreet, Tubbs, and Point of Rocks Springs, the easternmost spring of the Bradford Springs group, and Crystal Pool. The ranges of both the pupfish and the dace have been reduced from 1 mile to about 200 yards in the Bradford Springs outflow and from 3 miles to 0.5 mile in the Big Springs outflow. The range of the pupfish has been reduced from 6 miles to 0.5 mile of the Point of Rocks Springs outflow and from 2,000 acres to about 0.5 acre in the area of Fairbanks, Rogers,

and Longstreet Springs. Dace and pupfish populations were temporarily extirpated from Jack Rabbit Spring when the spring pool was pumped dry. Both the dace and pupfish populations are much reduced in most of the limited habitat that they still occupy. Both the pupfish and the dace have been eliminated from Carson Slough where draining, plowing, and mining have eliminated the fish habitat.

PEC's long-term development plans call for direct alteration of many of these springs with construction to progress in three phases in the following areas: Phase I—Crystal Pool; Phase II—Point of Rocks Springs; Phase III—Fairbanks Spring complex. The Nye County Commission has already approved Phases I and II, and work has begun. Further, PEC, as principal owner of water rights, has made application to the State of Nevada to divert water from many of the other Ash Meadows springs, which will destroy more riparian habitat. Ground water pumping may seriously deplete water levels (directly and indirectly) upon which the fish species depend. In the past, pumping of ground water from nearby wells for agriculture has lowered the water level in Devil's Hole in Ash Meadows, which caused a severe decline in the population of the Endangered Devil's Hole pupfish; continued pumping could have caused the extinction of the species. In 1976 the U.S. Supreme Court ruled (*United States vs. Cappaert et al.*) that a minimum water level must be maintained to protect the Devil's Hole pupfish. Devil's Hole is the most sensitive spring in Ash Meadows, but all of the springs are interconnected. The impact of ground water pumping from wells south of Devil's Hole appears to be greater than from those located in the north. Because agricultural and municipal activities require large volumes of water, and pumping of ground water from the northern areas may be necessary to supplement flows from the south, it is expected that the proposed development by PEC will create a demand for water throughout Ash Meadows.

Introduction of exotic fish and other aquatic species which compete with or prey upon native species have caused the extinction of the Ash Meadows killifish (*Empetrichthys merriami*) and reduced or extirpated other native fish populations. Continued modification of habitat by construction activity can only exacerbate this problem.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Not applicable to these species.

C. Disease or predation.

Numerous exotic organisms have been introduced into springs in Ash Meadows. Some of these exotics, including largemouth bass (*Micropterus salmoides*), crayfish (*Procambarus clarkii*), and bullfrogs (*Rana catesbeiana*) prey on the Ash Meadows Amargosa pupfish and the Ash Meadows speckled dace. Largemouth bass have been introduced into Crystal Reservoir and have subsequently gained access to Crystal Pool and its outflow. Crayfish and bullfrogs are common inhabitants in many springs and have significantly contributed to the decline of the Ash Meadows pupfish (La Rivers, 1962; Miller, 1948).

D. The inadequacy of existing regulatory mechanisms.

No permanent regulations exist to protect the two species of fish included in this rule. The existing emergency regulations will expire on January 5, 1983.

E. Other natural or manmade factors affecting its continued existence.

The extremely small range and specialized habitats of these species make them especially vulnerable to all of the factors that adversely affect them.

Vandalism has been reported at a number of springs. Future acts of vandalism could cause the extinction of local populations of the fishes.

The Mexican mollie (*Poecilia mexicana*) and mosquitofish (*Gambusia affinis*) have been introduced into several Ash Meadows spring systems including Point of Rocks, Jack Rabbit, Big, Bradford Springs, and Crystal Pool. These exotic fishes have replaced the pupfish and dace as the dominant species in the affected springs (Deacon *et al.*, 1964). Exotic snails have also become established in several springs, where they compete for food with native fishes.

Critical Habitat

50 CFR Part 424 defines "Critical Habitat" to include areas within the geographical area occupied by the species at the time the species is listed which are essential to the conservation of the species and which may require special management considerations or protection and specific areas outside the geographic area occupied by the species at the time, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Critical Habitat for the Ash Meadows speckled dace is as follows:

Nevada, Nye County: Each of the following springs and outflows plus surrounding land areas for a distance of 50 meters from the springs and outflows:

Bradford Springs in Section 11, T. 18 S., R. 50 E., and their outflows for a distance of 300 meters from the springs.

Jack Rabbit Spring and its outflows flowing southwest to the boundary between Section 24 in T. 18 S., R. 50 E. and Section 19, T. 18 S., R. 51 E.

Big Spring and its outflow to the boundary between Section 19, T. 18 S., R. 51 E. and Section 24, T. 18 S., R. 50 E.

Critical Habitat for the Ash Meadows Amargosa pupfish is as follows:

Nevada, Nye County: Each of the following springs and outflows plus surrounding land areas or a distance of 50 meters from these springs and outflows:

Fairbanks Spring and its outflow to the boundary between Sections 9 and 10, T. 17 S., R. 50 E.

Rogers Spring and its outflow to the boundary between Sections 15 and 16, T. 17 S., R. 50 E.

Longstreet Spring and its outflow to the boundary between Sections 15 and 22, T. 17 S., R. 50 E.

Three unnamed springs in the northwest corner of Section 23, T. 17 S., R. 50 E. and each of their outflows for a distance of 75 meters from the spring.

Crystal Pool and its outflow for a distance of 400 meters from the pool.

Bradford Springs in Section 11, T. 18 S., R. 50 E., and their outflows for a distance of 300 meters from the springs.

Jack Rabbit Spring and its outflow flowing southwest to the boundary between Section 24, in T. 18 S., R. 50 E. and Section 19, T. 18 S., R. 51 E.

Big Spring and its outflow to the boundary between Section 19, T. 18 S., R. 51 E. and Section 24, T. 18 S., R. 50 E.

Point of Rocks Springs and their entire outflows within Section 7, T. 18 S., R. 51 E.

These Critical Habitats include the springs and associated outflows that are the sole remaining habitat for these fishes. The Critical Habitats also include land areas immediately surrounding these aquatic land areas. These land areas provide vegetative cover that contributes to providing the uniform water conditions preferred by the pupfish and dace and provides habitat for insects and other invertebrates which constitute a substantial portion of their diet.

The activities that may adversely modify these Critical Habitats are described in the "Factors Affecting the Species" section of this emergency rule.

Effect of the Rule

Endangered Species regulations already published in Title 50, § 17.21 of the Code of Federal Regulations, set forth a series of general prohibitions and